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MISCELLANEOUS.

Can the Mortality From Surgical Lesions of the Intestines Be Reduced, and How?

BY J. B. MURPHY, M.D., CHICAGO, ILL.

Read at the annual meeting of the Kansas Medical Society, May 16 and 17, 1895.

Mr. President and members of the Kansas Medical Society: I must apologize for intruding myself upon you to-day, as I did not know at what time my paper was to come, and I must return home to-night.

The question of intestinal obstruction is a very interesting one to every medical practitioner. The question of mortality from intestinal obstruction has produced more controversy, probably, and that for a longer period of time, than any other one in the whole field of surgery. Why? Because the subject of intestinal obstruction has been indefinitely classed. There has been a term in use for years—one which I will use—"ileus." Ileus is supposed to mean intestinal obstruction, but it does not. If you pick up the medical journals of to-day you will find in examining the reports of various authors and operators that one man has a mortality of 100 per cent. when his cases are not operated; another has a mortality of only 66 per cent. when his cases are not operated. Why? Because the two men include under the term ileus different pathologic conditions. By the term ileus (and I think we had better use that in surgery for the future) we mean a train of symptoms, and not a definite pathologic entity. By the term ileus we mean complexus of symptoms, pain in the abdomen, accompanied by nausea and vomiting, with inability to produce bowel movement.

Now, what are the pathologic conditions that can produce these three symptoms? In drawing your attention to them I wish to refer primarily to conditions of the alimentary canal itself. If we will take a mechanic's view of the alimentary canal, we shall find that it is a long, muscular tube; take it, for instance, from the pylorus to the sphincter ani: it is irregular in size; it has contractions; it has sphincters and valves; it has dilatations and has its cæcum. It has another function besides secretion, absorption and excretion; that is, the power of propelling its contents. This is the function that primarily concerns the surgeon. It has the power of propelling its contents along through that canal; when that is interfered with we have intestinal obstruction. In how many ways, then, can that be interfered with?

1. By its own inert inability to propel its contents; and

2. By mechanical obstructions.

The first we will call adynamic ileus; the second we will call mechanical ileus. How is the first produced? By paralysis or by spasmodic contraction. That is, we have an interference with the passage of the contents through the canal by a paralysis of the muscles, either direct or indirect from the central source, or we may have an obstruction to the canal produced by contraction of the muscles as we have in lead colic. Therefore, in adynamic ileus, we must take into consideration the various conditions which produce a paralysis of the intestine itself. I have classified these as follows: Paralysis from ischæmia, that is, paralysis from interference with the blood supply. I have demonstrated by experiments on the dog that the blood supply of the intestine

is carried from two sources. I have here represented a section of the intestine in which the direct supply from the mesentery has been shut off, as you notice here, by three ligatures, and the blood is supplied by the parallel vessel which has not heretofore been recognized of importance in surgery. This, represented by the dark line, is the second blood supply, or the collateral blood supply, and the well-trained surgeon very frequently looks to it for the nutrition of the intestine. It is very important. For instance, we can in an experiment ligate the mesenteric supply for a space of seven inches, the collateral circulation supplies it, and the intestine retains its vitality; but when we exceed seven inches, that is, say, ten or twelve inches, the collateral supply from this parallel vessel is not sufficient to sustain the vitality of the bowel, and we have necrosis on the convex side at the greatest distance from the parallel vessel. That is an important, practical point in intestinal surgery. We find that when the mesentery is injured, or when the bowel is wounded on the mesenteric side, it is not necessary to resect the bowel except when a greater distance than six inches, and that, too, on the proximal side, has been shut off in its supply.

Now, let us change the experiment; let us ligate the mesenteric vessels here; let us also ligate the parallel vessel and allow the caliber of the intestine to remain intact; when we do that, if we include more than half an inch of the parallel vessel, we immediately have paralysis of the intestine supplied by that half inch, necrosis and death.

Therefore when we have a lesion that involves more than half an inch of the parallel vessel, it becomes imperative on our part to promptly resect the bowel that was supplied by the parallel vessel where it has been shut off. When we have paralysis here [here the doctor referred to chart], when more than three inches is ligated, we have ischæmia and death of the wall of the bowel from that cause.

Paralysis from Strangulation.—If we have a hernia which has been strangulated for a number of hours, or days, if you please, dependent upon the degree and position of the strangulation, we have death of the wall of the bowel. How soon will that death take place? That will depend upon the amount of tissue involved, and the condition of the mesentery, but finally it will depend upon the interference with the circulation.

I have here another drawing showing you the position of the parallel vessel. If we have a hernia in which we have only a small portion of the circumference of the bowel involved, taking in a portion of the wall, and the strangulation is complete, death is speedy to the portion strangulated. If, on the other hand, we have a large loop of the bowel, involving the mesenteric vessels strangulated, shutting off the supply from this portion, or if we have a volvulus, we may have the supply rapidly shut off from the mesenteric vessels; still the supply of blood from the parallel vessels will be kept up for hours after the supply from the mesentery has been shut off, and will be sufficient to sustain the vitality of the coil. On the parallel vessel in a great measure depends the length of time in which a bowel can be strangulated before it becomes necrotic.

If, on the other hand, we perform another experiment: We ligate the parallel vessel at this point (a) and at point (b), and ligate the mesenteric at c c c, what will become of the segment? Shut off all the supply and how long will the bowel live? I found in the dogs, a peculiar condition here in the experiments; forty-eight to forty-nine hours after operation the dogs died, and the portion of the intestine that was situated between the ligatures down to the portion at the mesenteric margin had entirely disappeared; *i. e.*, there was nothing left that could be recognized as the bowel. I know of no way of explaining the rapid disintegration of that tissue except by the auto-digestion of the tissue by secretions in the bowel.

Another question comes up in connection with operations upon the circulation of the bowel, and that is where we are making an excision of the bowel, what will be the line

of incision if the shutting off of half an inch of the parallel vessel interferes with the circulation? If we make excision of the bowel and allow a greater portion of the convex surface, that is, on the distal side of the mesenteric attachment, to remain, we will have paralysis, ischæmia of the edges, necrosis, perforation and death. Therefore, in all operations on the bowel, in all operations of excision of the bowel, it is important that there should be a greater portion taken off opposite to the mesentery than on the mesenteric side. In that way we insure circulation. In place of making the excision as I have marked it in this drawing, make the line of excision in the opposite direction.

Again, as regards the circulation in the production of symptoms of tumefaction, swelling and distension of the strangulated coil: all of these are dependent upon this parallel vessel to a greater or less degree. For instance, if we will empty this segment of the bowel represented by a b c entirely of fluid and fecal contents, and put a ligature at a and a ligature at b, and another one at c, allowing only the parallel vessel to remain, we can produce artificially the condition that we have pathologically in cases of intestinal straugulation and volvulus, *i.e.*, distension of the coil. What will be the cause of this distension? Where does the supply come from? It comes from the parallel vessel. There is transudation from the arterial blood supply which has no return vessel; there is no vein accompanying this parallel vessel, and as soon as we shut off the recurrent flow of the blood, that is, from the mesenteric circulation, by these ligatures, we have only direct supply. We have the coil rapidly filling with fluid and the contents decomposing, which occasionally causes gas in the coil; but the greatest portion of material found in the coil is due to the transudation. Formerly we were taught that that distension was due to accumulation from above; that is, that it was forced in there. No, it is transudation of fluid from the intestine itself. We have, then, paralysis of the intestine and swelling from injury or obstruction to the mesenteric artery; we have also paralysis of the intestine and the symptom of ileus from injury to or obstruction of the cystic duct; we have then a reflex paralysis; that is a point that concerns the surgeon very greatly.

Under the adynamic ileus, I have included pain, nausea, vomiting and inability to produce bowel movement. This is generally understood to indicate intestinal obstruction. Now, with reflex cause, we may have exactly the same train of symptoms; for instance, with calculus in the cystic duct, we may have all the symptoms of intestinal obstruction for three, four or five days. Several times during the last year I have been called upon to operate for intestinal obstruction, but found the trouble due to impaction of gall stones in the cystic duct and a reflex ileus.

The next condition is that of spasmodic contraction of the intestine produced by lead colic. Here we also have the symptoms of intestinal obstruction; they may continue as long as five or six days under treatment in the recurrent cases. This is one of the most difficult conditions to differentiate from true intestinal obstruction. I will refer to that again when speaking of the symptoms of suppurative peritonitis. Peristalsis is increased in lead colic; while in all the other varieties of adynamic ileus there is an absence of peristalsis. Finally, we have adynamic ileus with very many cases of local suppuration and inflammation of the peritoneum.

It is an every day occurrence to hear a doctor say: "I can't tell when I have intestinal obstruction and when I have peritonitis." We have with peritonitis paralysis of the muscular wall of the intestine from local causes; we have vomiting, inability to produce bowel movement and pain; but we have in the early stage of every case, or at some stage of every case, the symptom of temperature. That is the only thing we can rely on in making a differential diagnosis; it is, to my mind, the most important indication that we can have in making a diagnosis in the early stages of peritonitis. There is besides the presence of temperature with this variety, as with all the other va-

rieties of adynamic ileus, an absence of peristalsis.

Now, we will take up for consideration the causes of death from ileus. What are they? Collapse or shock is the most frequent cause. We find the patient with intestinal obstruction each day getting worse until finally he collapses and dies; or we may have a secondary peritonitis produced by obstruction. It may be caused either by perforation or by infection through the wall of the intestine where there is no perforation. We have finally auto-intoxication, which I believe is the principal cause of the depression or shock; *i.e.*, we have an absorption of the decomposed proteids in the intestinal canal producing death by intoxication. How can we avoid these unfavorable results? That is the question that we are all anxious to have answered. How can we lessen the percentage of deaths from these causes? First, by early diagnosis. I believe that the advancement of medicine depends more upon placing stress upon early and accurate diagnosis than it does upon any other one thing. How will we make a diagnosis of intestinal obstruction? We have pain, nausea, vomiting and absence of bowel movement, and if it be a strangulated or a mechanical ileus, absence of temperature in the early stage. If it be a paralytic ileus, from infection, then there is present temperature; true it may not be more than 99.5°, but it is always present.

Local signs.—What are the local signs in intestinal obstruction? First, we will speak of mechanical obstructions. We have with mechanical obstruction distension of the coil on the proximal side, with violent distension of the strangulated loop. I have already explained that the distension of the strangulated loop is due to the accumulation of fluids. We can by careful palpation and percussion, outline certain areas of dullness; we can outline areas of increased resonance, and irregularities in resonance; these are very important signs in the examination of the abdomen. When speaking of irregularities, I do not mean the irregular muscular resistance we find when we press our finger tips on the abdomen in that manner, but when we lay our whole hand flat upon the abdomen (the proper way to palpate the abdomen) we can recognize the irregularities by keeping up a continuous pressure, and asking the patient to take full inspirations and expirations. In that manner we can also recognize and better outline irregularities in resistance. We can recognize then the tumor, and can outline irregularities on its surface and its percussion notes. What I desire to impress on you most forcibly, is oscultation of the abdomen, which, I believe is more important in making an accurate diagnosis in abdominal lesions than oscultation of the chest in making a diagnosis of diseases of the pulmonary organs of the heart. What can we learn by oscultation? By oscultation we can outline resonance or absence of resonance. We can outline the area of peristalsis or absence of peristalsis. In intestinal obstruction, as long as it is not accompanied by peritonitis, there is a continual roar and rumbling in the abdomen. There is increased peristalsis, which is due to continuous effort on the part of the intestine above the seat of the occlusion to force the contents through the mechanical obstruction. We find the increased peristalsis always present in mechanical ileus. In adynamic ileus, where it is due to paralysis, there is an absence of peristalsis; the abdomen is just as still as the grave; the stethescope may be placed on there, and it may be kept there for five, ten or fifteen minutes and we will not hear a sound. This is the condition when we have general suppurative peritonitis; if we have local peritonitis with the stethoscope we can outline its extent in very many cases by the absence of peristalsis over the inflamed area.

Occasionally there is chance for error in this connection. Where we have complete paralysis the fluid in the intestine moves to and fro during the respiratory act just the same as if it were in a rubber tube; from this motion we hear a splash, not a gurgle. This must not be confounded with peristaltic action; we will find it uniform with each respiration; but the rumble of peristaltic action of the intestine differs widely from it, as it changes every second.

One act on the physicians part obscures all the information that can be obtained from sensitiveness, pain and oscultation; that is the hypodermic injection of morphine. I believe that the administering of morphine has a most obscuring effect upon what we recognize as the signals of danger. Tenderness is a signal of danger as well as increased or diminished peristalsis. What does morphine do? Nothing whatever to relieve the cause, but it knocks down the signals of distress. As soon as morphine has been given the avenues of information have been shut off, *i.e.*, information that has been derived from the action of the muscular wall of the intestine; information that has been derived from the interference with the peripheral nerves. It is my firm conviction that morphine should never be given in case of lesion in the abdominal cavity until the diagnosis has been cleared up beyond a reasonable doubt.

If we have peritonitis and give morphine we smother up the symptoms. Morphine paralyzes peristalsis for something like twelve hours; one hypodermic injection of a third of a grain will do it; by its administration the sign that differentiates between adynamic ileus and mechanical ileus have been shut out; the only signal that is wanted to guide us as to whether we should operate at once for mechanical ileus, or whether we should remain quiescent awaiting for adynamic ileus. Therefore in abdominal surgery, in lesions of the abdomen, it is my practice and the practice of my assistants, to never give one single dose of opiate of any kind. Stimulants may be given as whisky, bromide, or chloral; you may place fomentations, poultices; even chloroform may be given where the pain is too severe to be borne. These relieve pain and do not affect peristalsis; but morphine paralyzes it almost immediately after its administration.

Now, after the diagnosis is clear, and I may say the task is not difficult if we have not covered up the signs—which are, I must say, very plain when we consider them in this manner—we have the line of duty yet to perform. If we have a mechanical ileus, our duty is plain to operate, and in this class of cases, if we will analyze the literature on the subject, we will find that the man who had a mortality of 100 per cent. in his cases of intestinal obstructions was the man that called intestinal obstruction or ileus the condition produced only by mechanical causes. The operation must be done speedily; it must be done before necrosis of the bowel has taken place; before the arterial supply from this parallel vessel has been destroyed. That is the time to do the operation, early in the pathological process before the patient is collapsed. The operation must be early. How long can we wait? How long we can wait is answered by that blood supply. If we know how much pressure is made upon that artery, it may aid us somewhat; but we do not know, as we have no means of estimating with accuracy. We can with the stethescope down on the sac, in a hernia for instance, recognize the vitality, as in the first twelve hours we will find the contents moving about; the motion becomes lower and lower until finally the contents cease moving; we find then no peristalsis, the blood supply is shut off; the doctor will wait eight hours at the longest before operating if he cannot reduce it. No intelligent practitioner of to-day will wait in internal ileus until strangulation of the canal has gone so far as to cause destruction of the intestinal wall. No man will do it when he has cleared up his diagnosis; when he is satisfied in his own mind that he can differentiate between strangulation or mechanical ileus and adynamic ileus.

The next question is: What operation will we perform? Whatever operation we do, do it rapidly, do it quickly. Go into the abdomen quickly, but for heaven's sake get out! That is a good rule. Have an idea of what is to be accomplished, open the abdomen, do the work, get out and close it up.

Now, I have included in the causes of death infection by proteids. Every surgeon here will call to mind a case in which he has reduced a strangulated hernia, where he did the entire operation without cutting, or dilating the neck of the sac and put the bowel back; the patient went right along

two, three, four, or even twenty-four hours, with the same symptoms as before reduction, except the vomiting, and then died. Why? He did not die of peritonitis, he did not die from obstruction; he died from the absorption of the decomposed proteids that were contained in the intestine above the obstruction; absorption took place as soon as they began to pass. This occurs without resection and with resection, and it occurs in a great many cases. I have seen a number of these cases where there was no resection of the bowel, but merely a restoration of the canal, the bowels commenced moving and the patient died, Post mortem showed no cause for death. How can we avoid that? I do not know, but it is my practice in these cases immediately after reducing an intestinal obstruction, either with or without resection, to start in a brisk catharsis, and hasten as much as possible the escape of the decomposed contents from the intestinal canal. Then, if the patient has passed a few hours without continuation of the shock, I consider him in a fair condition for recovery.

Mississippi Valley Medical Association.

The arrangements for the twenty-first annual meeting of this association are about complete.

In response to the general invitation sent out in May, many letters are being received daily by the Secretary. These letters are largely acceptances, and the outlook for the Detroit meeting in September is indeed bright.

A number of excellent papers have been already received, and the scientific treat in store for those attending the meeting, will amply repay them for the trip.

The profession of Detroit promise a most delightful week socially; The ladies are especially urged to attend the meeting, and, by their presence, add to the enjoyment of the social pleasures.

There is no more delightful season in which to visit the picturesque city of Detroit than the late summer. Located within a short distance are many boautiful river and lake resorts, making it possible to arrange snme very pleasant side trips.

Lay aside your professional burdens during the first week of September, go, with your family to Detroit, enjoy the intellectual feast during each day, and during the evening hours partake of the bountiful hospitality which the profession and good citizens of the city will extend to you.

FREDERICK C. WOODBURN,
Secretary.

Heroism of Medical Officers in the Chinese War.

Medical Record.

An item which must excite admiration is reported by a correspondent at Wei-hai-wei in the current number of the *Broad Arrow:* "Now came a touching proof of heroic devotion to duty. While the storm of lead was still hurling thickly through the air, a company of Red Cross men, always well to the front, appeared on the field, stolidly marching out from the ravines, two and two, with stretchers and 'first-aid' appliances for their comrades, right under the withering fire from the gunboat, with never a moment's hesitation. Unarmed, but for a paltry dirk at the side, helpless in any case against such an attack, with foes heedless or ignorant of the sacred significance of the Red Cross badge, they did not flinch for a moment on their errand of mercy. It would have been easy to wait until the fire should cease, but they nobly went on and did their work as if on their parade-ground at home. One by one the dead and wounded were sought out all over that wide field of blood, and borne away, until within twenty minutes the place was completely cleared of every man, living or dead. Colonel Taylor, A.M.S., declared it the most splendid deed he ever saw, and the other foreign attaches who saw it were equally emphatic in their praise."

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Topeka, Kansas, Saturday, June 29, 1895.

Nursing.

Every man who has been sick knows how to appreciate good nursing, but few men when they are sick know what good nursing is. It is naturally impossible to combine every quality of mind and character in one individual, therefore the perfect nurse does not exist. Different nurses suit different people, and it is perhaps, because they cannot be perpect that one nurse will not suit every case. There are a great many who from professional training are fully competent to manage successfully any kind of disease from a scientific standpoint. It is very essential, however, that another qualification be added, that is, the ability to please the patient and yet not relax a particle of the vigilence necessary for the successful issue of the case. To the skillful, trained, patient nurse, the physician and the surgeon owe much of the success of the past dozen years.

The physician who makes his regular calls has much the advantage of the nurse, who in close proximity to the patient soon learns all the faults and foibles, and if there be in her makeup anything antagonistic to the individual traits of the patient, it will be a very unpleasant association. It is frequently the case that a change of nurse makes a wonderful difference in the progress of the case. This is not necessarily because of a difference in ability, but in many instances it is simply the individualism.

How Came It?

An amusing story is told of a certain "Shaker Doctor," who recently visited Topeka, and is vouched for by a local physician. A lady called to consult the noted (?) doctor on some ailment, and he soon informed her that her trouble was due to a tapeworm which he would remove for her. Arrangements were made for her and her lady friend to call the next day. On reaching the office at the appointed time, she was readily recognized by the "Shaker" and shown into a private room. After administering a dose of medicine, presumably an active cathartic, he showed them a vessel in which there was some dirty water, cigar stumps, etc, and suggested that when necessary she should use this vessel. He then left the room to inform some other callers of the prospective arrival of the tapeworm. After a short interval, he returned to the ladies telling them he would now show them the worm, and immediately proceeded to draw forth from the vessel a long tapeworm, "Ah," said he, "I told you I would get it. Here it is head and all." The lady, somewhat surprised saked to see it. After examining it closely, she said: "Isn't it strange? And I have had no occasion to use the vessel either."

This was doubtless only a repetition of many like occurences. The Shaker has departed and it is unfortunate that some means

cannot be found for preventing his appearance at some other place where other gullible people may happen to live.

Melano Sarcoma.

Remarks of Dr. Glibert in discussing "Melano Sarcoma," before the Topeka Academy of Medicine and Surgery.

There is a point in connection with the pathology of these pigmented neoplasms to which I desire to call the attention of the members. A point which I have never seen mentioned. Pigment found in the tissues is derived from one of four sources:

1. From hemorrhagic extravasations.
2. From cell action on hæmatin.
3. From bile salts.
4. From extraneous sources.

Pigmented neoplasms come under the second head, or those derived from cell action on the coloring matter of blood.

Normally, we find coloring matter only in a few locations in the white race, but in the negro, of course, pigmented cells are found abundantly in the skin. In the white race the pigmented cells of the eye are the principal ones. The connective tissue cells of the choroid coat of the eye are many of them pigmented.

Now, a sarcoma is a neoplasm springing from connective tissue structures. Probably the melano sercoma is developed from pigmented cells of the choroid and the newly formed cells still retain the property of cell action on the coloring matter of the blood.

It is a well known fact that this form of sercoma is one of the most malignant, but why the secondary growths are found in the liver in preference to the lungs I am unable to say. The secondary growths exhibit all the properties of the original growth.

An early recurrence is to be expected in this case, and the fact that such has not taken place in the nine months which have elapsed is an encouraging point.

We will send you the Kansas Medical Journal one year and a copy of The Country Doctor, by Willis P. King, for $1.25

Acetanilide as a Dressing.

The Therapeutic Gazette.

Morton writes in the *Polyclinic* of February 16, 1895, that the action of acetanilide upon wounds, especially granulations, when used in full strength, is to produce intense dryness, blueness, and to check at once and to prevent the formation of pus. Upon extensive granulating surfaces and chronic ulcers a slight burning sensation is at first perceived, which is rapidly succeeded by a sedative or anesthetic effect. If used in sufficient quantity, a thin scab of acetanilide, combined with the wound secretions, forms, under which healing rapidly progresses. If a very large surface is exposed to the action of the undiluted drug, toxic symptoms promptly supervene in susceptible individuals. It is probable that children and the aged are more sensitive to its absorption than are vigorous middle-aged persons. It is also probable that anemia might follow too prolonged application of large quantities of the substance, because of its destructive action upon the red blood corpuscles; this, however, he has not seen. The powder does not, as a rule, stick to wounds or hold dressings fast; but when it does so, alcohol causes instantaneous release by dissolving the drug.

Under no circumstances does acetanilide irritate the skin or wounds, even when used beneath impervious protectives or antiseptic poultices.

What may be the best vehicles for applying acetanilide must yet be proved. Upon most of his cases the pure powder was used from a dusting-box. This, while usually safe, he thinks has been an unnecessary waste, for very recent experiments in dilution have shown him that a one-fifth to one per cent. solution with petrolatum was sufficient to arrest suppuration and secure rapid healing in an extensive septic scald. All pain vanished after the first application.

When absorption of the drug has been desired, it has been used, either pure or mixed, with an easily absorbed agent, such as lanolin. When employed for purely local effect

in ointment form, he has usually prescribed a drachm to the ounce of petrolatum.

Acetanilide dissolves in five volumes of alcohol, in twenty volumes of ether, and in two hundred volumes of water. It is soluble in liquid petrolatum to the extent of forty grains to the ounce. In chloroform it very freely dissolves. What powders will prove best as diluents it remains to be proved, but boric acid does not appear to interfere with its action.

By diluting with water a saturated alcoholic solution of acetanilide, the drug will be thrown out of solution in the shape of fine crystals, and will remain perfectly mixed in suspension long enough to permit of its use in this form as an injection for abscesses or carbuncles, in gonorrhea, etc.

He has used acetanilide gauze in many cases in which iodoform gauze would previously have been indicated. This gauze was made after the glycerin and soapsuds formula, for iodoform gauze of a strength of ten per cent., by the nurses at the Pennsylvania Hospital. At present several of the manufacturers of surgical dressings are making the gauze by several formulas and of various strengths for experimental purposes. He believes that for the average wound requiring packing a very weak gauze will prove satisfactory and safe.

In the large number of cases in which he has freely employed acetanilide, but twice have toxic effects been noticed; one was in an infant aged fourteen months. He had excised the hip for tuberculosis, and packed with iodoform gauze. Upon re-dressing a few days later, the iodoform was replaced by ten per cent. acetanilide gauze. Four hours later the temperature dropped five degrees, and there were great pallor and feeble pulse. The temperature rose upon the withdrawal of the acetanilide. The second case was one of superficial suppurative scald of arms, chest, legs and head in a man aged 57 years, who had for six days been dressed with boric acid ointment. About 2 drachms of finely powdered acetanilide were dusted over the surfaces at 12 o'clock noon. At 5 P.M. the patient became blue, respirations somewhat accelerated, pulse slow and very compressible; face and extremities covered with cold perspiration; temperature normal; mind clear. All acetanilide was at once removed. At 8 P.M. he became maniacally delirious and intensely blue. He yawned to such an extent as to dislocate the lower jaw several times. Beginning with the first symptoms of poisoning, he was freely stimulated with digitalis and whisky, and at midnight of the same day was in normal condition. The delirium, of course, may in part or wholly have resulted from the whisky. Practically no suppuration took place afterward, and he was soon sent home.

He has found that all ordinary suppuration ceases in the presence of acetanilide, even when much diluted, in a manner equally astonishing and gratifying. Abscess cavities, boils, and carbuncles, when opened, and dirty, greasy wounds, produced by machinery or upon the street, have healed, as a rule, without further suppuration, and in an unprecedentedly short time after acetanilide has been applied, in the form of either pure powder, gauze, ointment, or dissolved in alcohol, water, or oil, as an injection. Sloughing septic lesions have been trimmed up, dusted with acetanilide, and saturated without drainage, yet have frequently healed by primary union. Clean wounds have been likewise freely dusted and saturated, and have healed similarly, thus proving that the drug does not interfere with healing in the absence of sepsis. So slight is the secretion of wounds so treated that many extensive ones have been healed under the collodion scab.

Tuberculosis lesions appear to be affected in a much better manner by acetanilide than by iodoform, probably, in large part, as in other wounds and conditions, by the intense dryness of the surroundings depriving the bacilli of their required pabulum. Tuberculous bone cavities have healed rapidly under acetanilide gauze (ten per cent.).

A number of fistulas have instantly taken on a healthy appearance after injection of alcoholic, watery, or oleaginous solutions of acetanilide, and have quickly closed.

Suppurating joints freely dusted with the drug after opening have ceased to form pus,

and under the subsequent packing of the wounds with acetanilide gauze have healed with excellent functional results. In acetanilide he believes that we have the safest dressing to ward off the infection of joints subsequent to operation through wounds, persistent fistulas, etc. It would appear that pus microbes cannot exist in the presence of the drug, and that skin bacteria do not multiply in its proxmity.

In compound fractures the use of the agent is obvious, and the results, so far as prevention of sepsis goes, are excellent.

As yet he has not injected suppurating or tuberculous joints, or acute or cold abscesses, with the substance, but is about to commence some experiments in this promising direction.

Upon chancroids the effect of acetanilide is, perhaps, most surprising of all. These troublesome sores heal almost instantly under a crust of the agent. At the Out-Patient Department of the Pennsylvania Hospital, during the past two months, he has been able to study the effect of acetanilide upon a large number of snch cases, as well as upon other venereal irritations about the benitals. All of these soft sores and inflammations have uniformly healed in from one to seven days, with a single exception. This one was of a phagedenic nature, and required cauterization by nitric acid before it would heal under the acetanilide. His habit at present is to prescribe a drachm of powdered acetanilide and direct the patient to wash several times daily, and subsequently to rub in the dry powder. If the sore is beneath the prepuce, he is instructed to leave a quantity of the drug inside Presence of the powder prevents excoriations by urethral discharges. The entire absence of odor from the drug is especially gratifying to venereal patients.

Syphilitic chancres and condylomata are usually much improved by the dry powder, and some are promptly cured. Secondary and tertiary ulcerations are stimulated by the drug, and, when thus relieved of the septic element, are prone to more rapid cicatrization.

External and internal rectal affections are instantly benefited by applications in the form of powder or by ordinaay cocoa-butter suppository containing three grains of the drug. One case—a child with an ulcer of the rectum—complained of pain after full-strength powder was used. Irritable or inflamed hemorrhoids are at once relieved by this suppository, as a rule. Fistulas about the anus heal very well when split open and packed with the gauze.

Ingrowing toe-nails rapidly lose their irritative element when painted with the alcoholic solution and packed with cotton containing the powder.

In injuries of the head, involving bleeding of the ear, he has packed the external auditory canal with pure acetanilide, in order to prevent the invasion of the inner ear or brain by sepsis from without.

Before experimenting with the drug it had been his custom to paint suture lines, after closing a wound, with a saturated solution of iodoform in ether, in an attempt to sterilize the surrounding skin of its normal bacilli. This has given way to to the saturated alcoholic solution of acetanilide, with the effect of almost always preventing such abscesses.

He has seen much to lead to the belief that in acetanilide we have at last found a substance which will either destroy or render inactive the normal bacteria of the skin by its absorption into and through the epidermis. A few facts point likewise towards the possibility of controlling certain inflammations of the lymphatic and superficial tissues by contact with the drug during absorption from the surface into the economy.

Finally, it should be pointed out what great possibilities of usefulness this drug may have in first aid to the injured in factories and mines, upon railroads, in ambulance service and upon the battle-field.

Treatment of Fibroids of the Uterus.

Maryland Medical Journal

Dr. O. S. Phelps of New York (*American Medico-Surgical Bulletin*) reports an unusually complicated case of uterine fibroid in

a girl 17 years of age, who came under his care in July, 1894. She was sent from the West to New York by the family physician to have a hysterectomy performed, and came directly to his sanitarium. The tumor was 8 to 10 centimeters in diameter, and crowded the uterus well over to the left side. The uterine cavity measured five inches and the organ with its appendages was surrounded and bound down by an inflammatory exudate. The bladder was impinged upon so that it could not hold more than one or two ounces of urine, causing the patient great agony to evacuate it. The whole mass including tumor, exudate, uterus, and appendages, filled the pelvis and rose well up in the umbilicus. The patient was much emaciated, weighed 90 pounds (normal 125 pounds), could not stand or walk, nor could she turn in bed without great pain. Temperature 100° to 101°. Dr. A. H. Goelet was called in consultation and confirmed the diagnosis; he also agreed that no operation could be considered at that time, but thought ligation of the uterine arteries might be resorted to later.

The treatment adopted was the high tension faradic current, 15 minutes thrice daily, vagino-sacral, and abdominal. At each seance the temperature was reduced ½ to 1 degree, lasting 1 to 2 hours. A system of feeding was adopted under the guidance of microscopical observations of the blood and secretions to determine the correct choice of food. In two months the temperature remained normal and the weight had increased 30 pounds. Galvanism was then used with anode to tumor per vaginum, by means of a special clay electrode with cathode closely adopted to tumor over abdomen; 20 to 30 milliamperes of current, 7 to 10 minutes, every five days. January 15 tumor was reduced to a mere nodule, about the size of a walnut, exudation gone, uterine cavity measured 2¾ inches. Patient's weight was then 125 pounds.

Conclusions—The writer ascribes the favorable results in this case:

1. To a systematic plan for restoring the nutrition, under such favorable conditions as are afforded by a sanitarium.

2. To the persistent use of the high tension faradic current to allay pain, reduce inflammation, and induce absorption.

3. To the galvanic current, so applied as to concentrate its action upon the fibroid growth.

The Etiology and Pathology of Tabes Dorsalis.

American Medico-Surgical Bulletin.

Borgherini (*Klin Zeitund Streitfragen*)—The first part of this interesting monograph is taken up with the consideration of the etiological factors of tabes. While recognizing the intimate relation between syphilis and many cases of tabes, the author dissents from the views of Erb, Struempell, Moebius, and others who look upon the disease purely as a postsyphilitic affection.

Many other factors enter into its causation; e.g., neuropathic tendencies, mental and physical overexertion, sexual excesses, misuse of alcohol and tobacco, injuries, etc. In the author's own statistics of sixty-eight cases, thirty-two per cent. only gave satisfactory evidence of previous syphilis, thirty-seven per cent. more had suffered from chancroid, an inherited neuropathic taint was found in about half of the cases, and there were frequent physical evidences of degeneracy. In ten per cent. absolutely no cause could be found.

These last cases he believes to be of especial significance. Some cause, of course, existed, and it is to be sought for among the sources of irritation, which on most persons would produce no impression, but which in certain individuals are sufficient to occasion the disease—causes which are distinguished neither by their peculiar nature nor by the intensity of their irritation, and which necessitate the assumption of still another etiological factor, viz., the organic predisposition of the individual.

In some this predisposition is so pronounced that the disease seems almost to develop spontaneously; in others, the majority of the cases, it is less marked, and tabes develops only by the help of one or more of the

well-known causes.

In the second part the writer reviews the pathogenetic theories which have at present the greatest number of supporters; chiefly the "spinal" theories.

These he divides into the exogenous and endogenous. Among the former are the meningeal theory of Rindfleish and others, the radicular of Leyden, and the ganglionic of Marie. Leyden believes the spinal lesion to begin in a primary degeneration of the posterior nerve roots. Marie's view differs in that he believes the primary lesion to be always in the ganglia of the posterior roots; that, since the ganglionic cell is the trophic center which controls the nutrition of the root fiber and its prolongation in the posterior columns of the cord, any degeneration of the fiber must of necessity be preceded by changes in the ganglion.

The meningeal theory of Rindfleish ascribed the origin of the trouble to a slowly progressive inflammation of the pia mater, from which, by reason of tissue continuity, a chronic interstitial myelitis developed in the posterior columns, with secondary degeneration of the fibers therein.

Obersteiner and Redlich have recently advocated a modifiication of this idea. They produce evidence to show that the conrich meningitis acts by constricting the posterior roots, and that as a result the proximal part of the root (that part removed from the ganglion), and its prolongation in the posterior columns, degenerate upward, according to the well-known Wallerian law.

Of the endogenous theories, that of Ordonnaz ascribes to changes in the walls of the vessels of the posterior columns the degeneration of the nerve fibers. The most generally accepted theory, however, from Cruveilhier down to Charcot, has been the so-called "protopathic" theory, which considered tabes as a primary degeneration of the centripetal nerve fibers in the posterior columns, and believed all other anatomical changes to be secondary or subordinate.

Many facts go to show that the chronic spinal meningitis is often set up as a result of degenerative changes in the cord. Moreover, many cases have shown meningitis altogether too slight in amount to account for the degenereration of the posterior roots. In some cases the existence of any meningitis has been denied. The author believes, therefore, that the meningeal theory cannot be applied to all cases of spinal tabes. He thinks it especially applicable to syhpilitic lesions, where the medullary changes are subordinate to the meningeal. Similar objections are to be raised against the ganglionic theory of Marie. The changes in the ganglia by no means always correspond to the degeneration of the roots. Often no change whatever is appreciable. The author sees no reason for discarding the protopathic theory, and believes, with Kahler and Pick, that primary degenerations of the fibers of the posterior columns occurs without, necessarily, changes in the root ganglia, and is to be ascribed to pre-existing anomalies of development of the former.

But lesions of tabes are by no means confined to the cord, and no theory which founds the pathogenesis upon the cord lesion alone can satisfy completely the demands of pathology. The spinal and other such theories fail when one attempts thereby to explain upon a single basis all the changes in the various nervous tissues.

Tabes is in its nature a "systematic" affection, whose first localization may occur simultaneously at several points in the nerve centers, which are not anatomically associated. These points are, however, always through the bond of function. In other words, the disease consists in a degeneration of the great afferent system of nerve elements.

To produce the disease, there is required, first and foremost, the presence in the individual of an organic predisposition which lowers the power of resistence of the nerve elements. Beside this, there is usually present one or other of the usual exciting causes, but the syphilis toxin, traumata, physical and mental over-exertion, etc., are agents which have nothing specific in their action, nor can they affect one set of fibers more than another. They attack those offering the least resistence. This may explain why anti-syphilitic treatment produces no good results in cases of genuine tabes.

Relieving a Crowded Profession.

Maryland Medical Journal.

At this season of the year, says the *Medical World*, when the annual new recruits to the army of physicians are going forth to take their places in the already well-filled ranks, it may be appropriate to consider how we may practically deal with the problem of overcrowding. The struggle for existence is becoming closer and closer, when, with vast untouched natural resources, and with new inventions daily multiplying our power of creating wealth, we should be able to live more easily every year. As a proof of the fact that it is our artificial conditions and not nature's limitation that makes the struggle severe, it has been demonstrated that any one of our six largest States is capable of sustaining in comfort and plenty the entire present population of the United States.

While it is true that we do not need *more* doctors, yet we always need *better* ones. Hence, those who keep themselves so constantly prepared by daily study, careful observation and occasional post-graduate courses, that the recent graduates cannot be better informed than they are in the latest advances of the science, will be able to hold and extend their practice.

Yet, on account of improvements in sanitary regulations and preventive medicine, and the rapidly extending popular knowledge of personal hygiene, the need of medical services is becoming less and less all the time. Hence, as the total amount of practice is thus diminishing and the number of physicians is increasing, there must be some who will find it difficult to obtain a living by the practice. To meet that difficulty we offer the following suggestions:

Insist that all public positions involving medical and sanitary service—coroners, superintendents of public institutions where medical knowledge is desirable, members of boards of health, sanitary inspectors and commissions— be filled by practical physicians. This gains for the public better service and relieves professional competition.

When a physician of education, character and ability presents himself for public legislative or executive office, the entire profession of the community, imitating the custom of our brethren of the legal profession, should cast aside all personal jealousy and unite in aiding to elect him. This, again, eases professional competition and secures a valuable public servant at the same time. Our law making bodies are composed almost entirely of lawyers and bankers. Doctors come in touch on all sides with the people, of all grades and classes, and hence know their ideas and needs. They naturally love justice and equity, and their scientific training well fits them for faithful public service. We need a great many of them in the various departments of legislative and executive service.

In many localities physicians may profitably engage in cultivating medicinal plants. This is at once a congenial, healthful scientific calling. Many of our native American medicinal plants are almost in danger of becoming extinct; while many that are obtained from foreign lands at great expense could be successfully cultivated here.

In many localities it would prove highly profitable to one who has an inclination for it to make especial study and become a thorough chemist, microscopist or bacteriologist, both for industrial purposes and for diagnosis in consultations. Every county could support such a specialist. In fact, a well-educated physician is prepared to engage with promise in one of the many scientific pursuits, should he not find the practice of medicine satisfactory, or even as a profitable recreation.

Lastly, we should all use our influence to dissuade as many as possible of the young men who seem inclined to plunge without due consideration into an expensive and unprofitable medical course.

A COPY of Antisepsis and Antiseptics with the Kansas Medical Journal one year for $1.75

The United States Public Board of Health Department.

British Medical Journal.

For some years past it has been a prominent aim of the American Medical Association to secure for the United States a central Government Department of Public Health, and preliminary steps have from time to time been taken to memorialize Congress to create such Department, together with a State paid Medical Secretary. Once again the Association brings the matter forward in the form of a memorandum to the Senate and House of Representatives, prepared by the Chairman, Dr. C. G. Comegys; and appended to this document is a draft of a bill to give effect to the object referred to. It is admitted that much excellent work is performed through the agency of different medical departments connected with the army, the navy, and different scientific bodies; but it is contended that government can, in a wider way, promote the public welfare by creating a Department of Public Health, the head of which should be a physician, a member of the Cabinet, and on a position of equality with the heads of the government departments. Under section 2 of the proposed bill the work of the department is set out. It may be regarded as covering all that is done by the Medical Department of the Local Government Board in this country, by the Registrar-General's Department, and by the Factory Department of the Home Office; and it is intended to be provided with the machinery for compiling information for the various State and other bodies on a multitude of social and health subjects, including the questions of food supplies, intemperance, prostitution, elementary education, etc.

With regard to the organization of the Board, we believe the Association is right in demanding that its head and its executive officers should be medical men. Indeed, we have heard only one valid reason for a change in the same direction in this country. It is said that if a new department in public health were created it would be the youngest department in the State and would have to rank as such. But the Local Government Board, which has public health functions in addition to a multitude of other duties, is gradually becoming a Ministry of the Interior, and it is assumed that when its position as such in the State is fully recognized, it will probably absorb one or two functions still performed by other departments, and its chief will be raised to the position of a Secretary of State. This is the ambition of the secondary State departments in this country, and there are those on the permanent staff of the Local Government Board who would resent the severance from the board of its public health functions, and for such severance would diminish its importance and cut adrift a staff which, to say the the least, has brought them some credit in the eyes of the public. In the States no such considerations as these arise, and it is to be hoped that the new department, when created, will be mainly in the hands of those who best know what is wanted for the control and the improvement of the health of the public.

Disturbances of Innervation.

Robert B. McCall, M.D., Medical College of Ohio, Cincinnati, now residing at Hamersville, Ohio, writes:

"My confidence in antikamnia is so well established that I have only words of praise. Independently of other observers I have proved to my satisfaction its certain value as a promotor of parturition, whether typical, delayed or complicated, and it effectiveness in controlling the vomiting of pregnancy. In cases marked by unusual suffering in second stage, pains of nagging sort, frequent or separated by prolonged intervals, accompanied by nervous rigors and mental forebodings, one or two doses, three to five grains each of antikamnia promptly changes all this.

"If there is a 'sleepy uterus' antikamnia and quinine awake energy, muscular and nervous, and push labor to an early safe conclusion. Indeed, in any case of small doses are helpful, confiming efforts of natuae and shortening duration of process.

"I have just finished treatment of an obstinate case of vomiting in pregnancy. A week ago the first dose of antikamnia was given, nervous excitement, mental worry and gastric intolerance rapidly yielded. This case was a typical one and the result is clearly attributable to the masterful influence of your preparation."